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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD KULAK and MICHAEL TRACEY

Appeal 2009-010856
Application 10/574,653
Technology Center 3600

Decided: November 25, 2009

Before JENNIFER D. BAHR, STEFAN STAICOVICI, and
KEN B. BARRETT, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Richard Kulak et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 3, 5-10, 12-14, and 16-22. Claims 2, 4, 11, and 15 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

Appellants' invention relates to a roller guide system for an elevator car assembly 20. Spec. 1, l. 7 and fig. 1. The system includes a plurality of rollers 32 that roll along the surfaces of guide rails 28, a motion detector 54 for determining vibrations or lateral movement of the elevator car assembly 20, a damper 40, an electromagnet 52, and a controller 50. Spec. 3, ll. 3-4, 15-16, and 29; Spec. 4, ll. 1 and 6; and fig. 3. The damper 40 includes a fluid that has a variable viscosity, *i.e.*, a magneto-rheological fluid. Spec. 3, ll. 25-27. During operation, motion information is provided by the motion detector 54 to the controller 50 which controls the magnetic field generated by electromagnet 52 so as to selectively vary the viscosity of the fluid in damper 40, and hence, to control the stiffness of the damper 40. Spec. 4, ll. 14-18.

Claim 1 is representative of the claimed invention and reads as follows:

1. A roller guide device for use in an elevator system, comprising:

a base;

at least one roller supported by the base such that the roller is rotatable about a roller axis and moveable relative to the base in at least one direction perpendicular to the roller axis;

> a damper that has a selectively variable stiffness and dampens the relative movement of the roller, the damper comprising a fluid having a selectively variable viscosity for varying the stiffness of the damper; and
>
> a controller that automatically increases the stiffness of the damper when an associated elevator car is stationary at a landing and decreases the stiffness of the damper when the associated elevator car is moving.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Fujita	US 5,289,902	Mar. 1, 1994
Hollowell	US 5,368,132	Nov. 29, 1994

Appellants seek review of the Examiner's rejection of claims 1, 3, 5-10, 12-14, and 16-22 under 35 U.S.C. § 103(a) as unpatentable over Fujita and Hollowell.

THE ISSUE

The Examiner found that Fujita discloses all the features of independent claims 1, 10, and 14 with the exception of a controller that automatically increases the stiffness of the damper when the elevator car is stationary at a landing. Ans. 3-5. The Examiner further found that Hollowell discloses a controller 24 that automatically increases the stiffness of the damper 59 when an associated elevator car 13 is at a landing and decreases the stiffness of the damper when the elevator car is moving. Ans. 4. The Examiner concluded that "[i]t would have been obvious to one of

ordinary skill in the art to modify the reference of Fujita with the teaching of Hollowell et al for ergonomics and marketability." *Id.*

Appellants argue that the Examiner has misconstrued the teachings of Hollowell. App. Br. 4. Specifically, Appellants argue that in contrast to the Examiner's interpretation, Hollowell does not teach a controller that automatically increases the stiffness of a passive damper when an associated elevator car is at a landing. App. Br. 4 and 5. Rather, instead of changing the stiffness of a passive damper, Appellants argue that Hollowell discloses using electromagnetic actuators to generate a force that moves the car platform toward the rails to "'lock the cab to a landing.'" App. Br. 5. *See also* Reply Br. 1. Since the mode of operation of Fujita's system is so different from Hollowell's system, Appellants further argue that the Examiner's proposed combination is not only unworkable, but it would change the mode of operation of Fujita's system because it would replace the passive damper of Fujita with the active force generator of Hollowell. App. Br. 6.

In response, the Examiner acknowledges that, "Hollowell is not cited for teaching a device that can necessarily operate the device of Fujita," but rather for teaching the *concept* of:

> [A]utomatically increasing a resistance to lateral motion upon reaching a landing in anticipation of the forces/vibrations generated by disembarking/embarking passengers, wherein said concept can be applied to the controller of Fujita that continuously monitors and counteracts the detected vibrations incurred upon the elevator car - irrespective of the elevator car being stationary or in motion.

Ans. 8.

Finally, Appellants counter that:

> It is not permissible to strain out some abstract "concept" from a reference and ignore how the reference actually teaches implementing that "concept" for purposes of attempting to manufacture a *prima facie* case of obviousness. Such an analysis is only based on hindsight reasoning because the reference does not provide any basis for that abstraction absent having the benefit of Appellant's disclosure and claims in the first instance.

Reply Br. 2-3.

Accordingly, the issue presented for our consideration in the instant appeal is as follows:

Have Appellants demonstrated that the Examiner erred in determining that the combined teachings of Fujita and Hollowell would have prompted a person of ordinary skill in the art to instruct the controller of Fujita to automatically increase the stiffness of the dampers when an associated elevator car is at a landing?

SUMMARY OF DECISION

We AFFIRM.

FINDINGS OF FACT

The following enumerated findings of facts (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Fujita discloses a system for controlling the vibrations of an elevator cage 5. Fujita, col. 1, ll. 8-10.
2. Fujita's system includes roller 10 that rolls along guide rail 3, a vibration sensor 24 for detecting the vibrations from cage 5, a damper unit 20 filled with magnetic fluid, an electromagnetic coil 23, and a control circuit 25. Fujita, col. 3, l. 59 through col. 4, l. 12 and figs. 2 and 3.
3. During operation, the frequency of vibrations from cage 5 are detected by the vibration sensor 24 and converted to an electrical signal that is transmitted to the control circuit 25 where it is compared to a predetermined value. Fujita, col. 4, ll. 23-30.
4. When the electric signal is smaller than the predetermined value, *i.e.*, low frequency vibration, the control circuit 25 increases the current flowing to the electromagnetic coil 23 to increase the viscosity of the magnetic fluid 22 (the viscous damping coefficient also increases). Fujita, col. 4, ll. 35-39 and 43-47 and fig. 4.
5. When the electric signal is larger than the predetermined value, *i.e.*, high frequency vibration, the control circuit 25 decreases the current flowing to the electromagnetic coil 23 to decrease the viscosity of the magnetic fluid 22 (the viscous damping coefficient also decreases). Fujita, col. 4, ll. 39-43 and 48-54 and fig. 4.
6. The Examiner determined that boarding and deboarding passengers from a stationary elevator car generates low

frequency, high amplitude vibrations. The Examiner further determined that an elevator car in motion (traveling along guide rails) generates high frequency, low amplitude vibrations. Ans. 7. Appellants have not disputed the Examiner's findings.

7. A person of ordinary skill in the art would have recognized that an increase in the viscosity of Fujita's magnetic fluid corresponds to an increase in stiffness of the damper 20, whereas a decrease in the viscosity corresponds to a decrease in stiffness of the damper 20.

8. Hollowell discloses a damping system using electromagnetic actuators to reduce lateral motion of an elevator cab when boarding and deboarding passengers. Hollowell, col. 2, ll. 48-51.

9. When the elevator cab of Hollowell is at rest, the cab is locked to a landing to keep it from moving as passengers alight and depart, and to reduce sideways jostling from door action. Hollowell, col. 3, ll. 9-14.

10. A person of ordinary skill in the art would have readily appreciated that all elevator cabs (cars) incur vibrations when boarding and deboarding passengers.

11. A person of ordinary skill in the art would have also recognized that when the elevator cab of Hollowell is locked to the landing, the damping system is characterized by a high degree of stiffness.

PRINCIPLES OF LAW

Obviousness

It is elementary that to support an obviousness rejection all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.,* 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.,* 383 U.S. 1, 17-18 (1966). *See also KSR*, 550 U.S. at 407 ("While the sequence of these questions might be reordered in any particular case, the *[Graham]* factors continue to define the inquiry that controls.")

OPINION

Appellants argue the rejection under 35 U.S.C. §103(a) of claims 1, 3, 5-10, 12-14, and 16-22 together as a group. App. Br. 4. Therefore, in accordance with 37 C.F.R. 41.37(c)(1)(vii)(2009), we have selected claim 1 as the representative claim to decide the appeal, with claims 3, 5-10, 12-14, and 16-22 standing or falling with claim 1.

Although we appreciate Appellants' argument that the Examiner's proposed combination is unworkable because it would replace the passive damper of Fujita with the active force generator of Hollowell, we note that obviousness does not require that all of the features of the secondary reference be bodily incorporated into the primary reference. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). *See also In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983)("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."). Moreover, the artisan is not compelled to blindly follow the teaching of one prior art reference over the other without the exercise of independent judgment. *Lear Siegler, Inc. v. Aeroquip Corp.*, 733 F.2d 881, 889 (Fed. Cir. 1984).

In this case, Fujita discloses a system for controlling the vibrations of an elevator cage including a damper unit having a variable viscosity, a vibration sensor, and a control circuit. FF 1, 2. The vibration sensor detects the vibration of the cage, converts the vibration into an electrical signal, and transmits the signal to the control circuit where the signal is compared to a predetermined value. FF 3. When the electric signal is smaller than the predetermined value, *i.e.*, a low frequency vibration, the control circuit increases the viscosity of the damping unit, hence increases the stiffness of the damper. FF 4, 7. On the other hand, when the electric signal is larger than the predetermined value, *i.e.*, a high frequency vibration, the control circuit decreases the viscosity of the damping unit, hence decreases the stiffness of the damper. FF 5, 7. Furthermore, we find that a person of ordinary skill in the art would have readily appreciated that boarding and deboarding passengers from a stationary elevator car generates low

frequency, high amplitude vibrations, whereas an elevator car in motion (traveling along guide rails) generates high frequency, low amplitude vibrations. FF 6. Hence, we agree with the Examiner that the system of Fujita continuously monitors and responds to the detected vibrations incurred by an elevator car by controlling the stiffness of the damper unit, regardless if the elevator is stationary or in motion. Ans. 8.

Further, we find that Hollowell discloses the desirability of reducing lateral motion of an elevator cab when boarding and deboarding passengers. FF 8. Specifically, Hollowell discloses a damping system in which electromagnetic actuators are used to lock the elevator cab to the landing to keep it from moving as passengers alight and depart and to reduce sideways jostling from door action. FF 8, 9. A person of ordinary skill in the art would have readily appreciated that all elevator cabs (cars) incur vibrations when boarding and deboarding passengers, including the elevator car of Fujita. FF 10. Furthermore, the same person of ordinary skill in the art would have recognized that when the elevator cab of Hollowell is locked to the landing, its damping system is characterized by a high degree of stiffness. FF 11.

Accordingly, in view of Hollowell's teaching of increasing the stiffness of the damping system to resist lateral motion caused by boarding and deboarding passengers, we find that it would have been well within the level of ordinary skill in the art to command the controller of Fujita to increase the viscosity of damper 20, hence to increase its stiffness, when the elevator car is at a landing, because it represents the "mere application of a known technique to a piece of prior art ready for the improvement." *KSR*,

550 U.S. at 417. After all, "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.* at 421.

Lastly, with respect to Appellants' argument that the Examiner's conclusion of obviousness is based on hindsight (Reply Br. 2 and 3), we note that the Examiner has set forth a reasonable rationale underlying the conclusion of obviousness. The Examiner has specifically noted that Hollowell's system affords "greater stability when passengers are embarking/disembarking [from] the elevator car." Ans. 4. As such, the Examiner reasons that, "[i]t would have been obvious to one of ordinary skill in the art to modify the reference of Fujita with the teaching of Hollowell et al for ergonomics and marketability." *Id.* Therefore, we determine that the Examiner did not rely on impermissible hindsight, as Appellants urge, but rather relied on the knowledge of those skilled in the art at the time of the invention.

For the foregoing reasons, Appellants' arguments do not persuade us that the Examiner erred in rejecting claim 1 as unpatentable over the combined teachings of Fujita and Hollowell. Accordingly, the rejection of claim 1, and claims 3, 5-10, 12-14, and 16-22, standing or falling with claim 1, is sustained.

CONCLUSION

Appellants have failed to demonstrate that the Examiner erred in determining that the combined teachings of Fujita and Hollowell would have prompted a person of ordinary skill in the art to instruct the controller of

Fujita to automatically increase the stiffness of the dampers 20 when an associated elevator car is at a landing.

DECISION

The Examiner's decision to reject claims 1, 3, 5-10, 12-14, and 16-22 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

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